PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q65717
Pascal AGIN, et al.	
Appln. No.: 09/924,719	Group Art Unit: 2616
Confirmation No.: 3974	Examiner: Feben HAILE
Filed: August 9, 2001	

For: A METHOD OF TAKING ACCOUNT OF TRAFFIC PROCESSING CAPACITY, FOR TRAFFIC LOAD CONTROL IN A MOBILE RADIO NETWORK

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

I. REAL PARTY IN INTEREST

The real party in interest is Alcatel Lucent.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-18, 21, and 24-36 are pending in the application.

Claims 1-18, 21 and 24-36 are rejected under the first paragraph of 35 USC 112 for failure to satisfy the description requirement.

Claims 1-3, 5, 14, 21 24 and 28-36 are rejected under 35 USC 102(e) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Fapojuwo (USP 6,330,232).

Claims 4 and 15-18 are rejected under 35 USC 103(a) as unpatentable over Fapojuwo in view of Hottinen et al (US 2002/0012380).

Claims 6-8 are rejected under 35 USC 103(a) as unpatentable over Fapojuwo in view of Vanghi (USP 6,393,276).

Claims 9-13 and 25-27 are rejected under 35 USC 103(a) as unpatentable over Fapojuwo in view of Vanghi, and further in view of Hottinen et al.

All of claims 1-18, 21 and 24-36 are appealed.

IV. STATUS OF AMENDMENTS

There were no amendments submitted after the final Office action of December 12, 2007.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention disclosed in the present application and defined in claim 1 involves a base station controller controlling traffic load in a mobile radio network. According to claim 1, a base station signals to the base station controller one or more limits relating to the processing capacity of the base station, and the base station controller controls the traffic load taking account of the one or more limits.

As described at lines 5-13 of page 3 of the specification and with reference to Fig. 1, it is known in the UMTS system for a Node B (i.e., a base station) to signal its overall processing capacity to the CRNC (a base station controller, e.g., RNC in Fig. 1). As described at page 9 of the specification, there are large processing capacity demands on a base station depending on different processing requirements. As described from line 30 of page 9 to line 20 of page 10, the signaling of just the overall processing capacity is not satisfactory, because it cannot take into account different limits on the processing capacity. Beginning at page 10 of the specification, there are described various types of limits, e.g., the maximum number of radio links that can be established in macrodiversity, the maximum number of links that can be established in transmission diversity, a maximum data rate for established radio links, specific types of maximum data rates, and limits on memory volume.

As described beginning at line 26 of page 14, various limit values relating to processing capacity can be transmitted each time the limit values change, and the updated limit values are sent in a resource status indication message defined in document 3G TS 25.433 V3.0.0 (2000-01) for UMTS, e.g., when a cell or a channel or a node changes its capabilities.

An example of the invention is shown in Fig. 4, and described at lines 28-34 of page 13, where reference M represents a signaling message sent from the Base station (Node B) to the base station controller (CRNC), said signaling message including the following pieces of information: maximum number of radio links (M_{MAX}); maximum data rate for convolutional decoder ($D1_{MAX}$); and maximum data rate for the turbo-decoder ($D2_{MAX}$).

Independent claims 21 and 24 are directed to the base station and base station controller, respectively, and are supported in the same portions of the specification as described above for claim 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Whether claims 1-18, 21, and 24-36 comply with the description requirement of 35 USC 112.

2. Whether Claims 1-3, 5, 14, 21 24 and 28-36 are anticipated by or, in the alternative, obvious over Fapojuwo.

3. Separately, whether Claims 2 and 5 are anticipated by or, in the alternative, obvious over Fapojuwo.

4. Separately, whether Claims 31, 32, 35 and 36 are anticipated by or, in the alternative, obvious over Fapojuwo.

5. Separately, whether Claims 33 and 34 are anticipated by or, in the alternative, obvious over Fapojuwo.

6. Whether claims 4 and 15-18 are unpatentable over Fapojuwo in view of Hottinen et al.

7. Whether claims 6-8 are unpatentable over Fapojuwo in view of Vanghi.

8. Whether claims 9-13 and 25-27 are unpatentable over Fapojuwo in view of Vanghi, and further in view of Hottinen et al.

VII. ARGUMENT

1. Claims 1-18, 21, and 24-36 comply with the description requirement of 35 USC 112.

The basis for the 35 USC 112 rejection is that the specification does not support the limitation that the signaling of processing capacity is independent of call setup. However, the discussion beginning at line 26 of page 14, points out that that various limit values relating to processing capacity can be transmitted each time the limit values change, which will necessarily sometimes be independent of a call request since the limit values will sometimes change independently of a call setup. The specification at this point further describes the sending of the updated limit values in a resource status indication message defined in document 3G TS 25.433 V3.0.0 (2000-01) for UMTS. This UMTS standard explains when the message is sent, including triggering events which are clearly independent of call setup, e.g., when a cell or a channel or a node changes its capabilities.

Accordingly, it is clear that the subject matter of all claims is supported in the specification as originally filed.

2. Claims 1-3, 5, 14, 21 24 and 28-36 are neither anticipated by nor obvious over Fapojuwo.

The method in Fapojuwo includes the steps of, in response to a call request:

receiving a representation of available call capacity from each of the base station transceiver subsystems

determining which of the base station transceiver subsystems has the greatest available capacity

enabling the base station transceiver subsystems having the greatest available capacity to handle the call.

Thus, in Fapojuwo, the method takes place in response to a call request, and the aim is to determine which of the BTSs has the greatest available capacity.

A feature of the present invention is that base station controller can make decisions taking into account the processing resources of the base stations it controls, without having to consult these base stations each time there is a call request, because the base stations have previously informed the base station controller of a "model" for managing these processing resources (this model in the present case using the processing capacity limits stated in the claims). The information regarding the management model is not sent to the base station controller when there is a call request but instead when there is a need to send the information, e.g., when there is a change in the processing limits.

All of independent claims 1, 21 and 24 recite that the sending/receiving of limit values relating to processing capacity is done independently of call setup. This is neither shown nor suggested in Fapojuwo. Note, for example, Fapojuwo mentioning "in response to a call request" in particular at line 45 of col. 1. The examiner has not alleged that this feature is taught or suggested in the prior art, but simply ignores the claim requirement on the alleged grounds that it is not supported in the specification. The examiner is not entitled to simply ignore clear limitations in the claims. It is not taught, and the claims are therefore not unpatentable over the prior art.

A further distinction over the prior art is that, in accordance with the present invention, the information sent from the base station to the base station controller includes one or more limits relating to the processing capacity of the base station, with the limits corresponding to parameters representative of the traffic load of the network. In Fapojuwo, the information provided to the base station controller from each base station indicates the available capacity. This is not the limit but rather how much is left before the limit is reached. Further, the available capacity is not necessarily expressed as a function of parameters representative of the traffic load. Thus, the transmission back to the base station of available capacity does not necessarily mean that the available processing capacity is expressed in terms of one or more limits which correspond to parameters representative of the traffic load of the network as is required of claims 1, 21 and 24.

In sum, the present invention sends information to the base station controller which relates to the capacity limits of the base station, with the information corresponding to a parameter representative of network traffic load. Fapojuwo instead sends back information on how much capacity is left. This is neither a limit value nor is it related to a parameter used to represent network traffic load.

The difference between an available capacity and a limit value is important. If Fapojuwo has a limit of ten calls and is handling five, it will indicate an available capacity of five. Five is not the limit value but is available capacity. In contrast, the present invention sends a limit value, so that in the present case if the base station can handle ten calls and is currently handling five, it will send a limit value of ten to the BSC. The examiner has responded to this argument

by saying that he is entitled to interpret the claim language broadly enough so that the value of five calls of remaining capacity would be a "limit". This is not reasonable.

In Fapojuwo, the information received from the base station is the available call capacity. This number will change during normal operation, and in order to function properly the load management system in Fapojuwo will have to be regularly updated as to the available call capacity of the base station. And the control algorithm in Fapojuwo does not need to track how many calls a particular base station is handling, because all it needs to know is whether there is still any availability. So instead of learning the limit value of calls and then monitoring the number of allocated calls to make sure that it does not exceed a limit value, Fapojuwo simply looks to see if there is anything available. It does not care whether a system ins handling one of ten (nine available) or 91 of 100(nine available), so it does not need to know the limit value and never needs to monitor to see if that limit value is exceeded. It knows that, whatever the limit value may be, it has not been exceeded because the base station is indicating available capacity.

Another way of viewing the difference between the present invention and Fapojuwo is that the comparison of present value to limit value is done at the base station and then the result of that comparison would be the available value sent to the base station controller, whereas the present invention relies on receiving the limit value from the controller so that the base station controller can do the comparison.

3. Claims 2 and 5 are neither anticipated by nor obvious over Fapojuwo.

Claims 2 and 5 are neither shown nor suggested by the prior art due to their dependence on claim 1 and for the reasons discussed above in connection with claim 1. In addition, claim 2 recites that the limit is represented by a maximum number of radio links that can be established. The information sent in Fapojuwo relates to the available capacity, but does not represent the maximum number or radio links that can be established. It represents how many more calls can be established before the maximum is reached, but it does not tell what that maximum is. Thus, claims 2 and 5 are not taught by Fapojuwo for this reason as well.

4. Claims 31, 32, 35 and 36 are neither anticipated by nor obvious over Fapojuwo.

Claims 31, 32, 35 and 36 are neither shown nor suggested by the prior art due to their dependence on claims 1 and 24 and for the reasons discussed above in connection with claims 1 and 24. In addition, claims 31 and 35 recite that the base station controller verifies if the limit value has been reached. Because what the examiner is considering the "limit value" in Fapojuwo is an available capacity, this limitation cannot be met. In the present invention, when the base station controller receives the limit value from the base station, e.g., a maximum number of calls, it can check to see if that base station is already handling that number of calls. But if what the base station controller receives is an indication of how many more calls the base station can handle, it never has to check to see if the maximum number is reached, because the base station already told it how many more calls it can handle.

For this additional reason, claims 31, 32, 35 and 36 are patentable over the prior art.

5. Claims 33 and 34 are neither anticipated by nor obvious over Fapojuwo.

Claims 33 and 34 are neither shown nor suggested by the prior art due to their dependence on claims 1 and 21 and for the reasons discussed above in connection with claims 1 and 21. In addition, claims 33 and 34 require that the parameter or limit value be something that has already been exceeded by the base station. This makes no sense in the context of Fapojuwo. In the present invention, the base station may signal to the case station controller that based on present circumstances it can handle a maximum of ten calls, and the base station controller can check and determine that the base station is already handling 11 calls. In Fapojuwo, on the other hand, a maximum ***available*** capacity is sent. The maximum ***available*** capacity cannot be exceeded, or it would not be available. This claim requirement makes no sense in the contect of Fapojuwo.

For this additional reason, claims 33 and 34 patentably distinguish over the prior art.

6. Claims 4 and 15-18 are not unpatentable over Fapojuwo in view of Hottinen et al.

Claims 4 and 15-18 are patentable over the prior art for the reasons discussed above in connection with claim 1 and because Hottinen et al does not make up for the deficiencies in Fapojuwo with respect to the subject matter of claim 1.

7. Claims 6-8 are not unpatentable over Fapojuwo in view of Vanghi.

Claims 6-8 are patentable over the prior art for the reasons discussed above in connection with claim 1 and because Vanghi does not make up for the deficiencies in Fapojuwo with respect to the subject matter of claim 1.

8. Claims 9-13 and 25-27 are not unpatentable over Fapojuwo in view of Vanghi, and further in view of Hottinen et al.

Claims 0-13 and 25-27 are patentable over the prior art for the reasons discussed above in connection with claims 1, 21 and 24, and because Vanghi and Hottinen et al do not make up for the deficiencies in Fapojuwo with respect to the subject matter of claims 1, 21 and 24.

For the above reasons, reversal of the examiner is respectfully requested.

Respectfully submitted,

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CLAIMS APPENDIX

CLAIMS 1-18, 21 AND 24-36 ON APPEAL:

1. A method for controlling traffic load by a base station controller in a mobile radio network, taking account of traffic processing capacity of a base station controlled by said base station controller, said method comprising the steps of:

said base station signaling to said base station controller, independently of a call request, one or more limits related to said processing capacity, wherein said one or more limits correspond to one or more parameters representative of said traffic load; and

said base station controller controlling said traffic load taking account of said one or more limits.

2. The method according to claim 1, wherein one of said parameters is associated with a number of radio links that can be established, and a corresponding limit is represented by a maximum number of radio links that can be established.

3. The method according to claim 2, wherein said maximum number of radio links is a maximum number of radio links that can be established in macrodiversity.

4. The method according to claim 2, wherein said maximum number of radio links is a maximum number of radio links that can be established in transmission diversity.

5. The method according to claim 2, wherein said maximum number of radio links is represented by a maximum number of radio resources that can be allocated.

6. The method according to claim 2, wherein one of said parameters is associated with data rate for established radio links, and a corresponding limit is represented by a maximum data rate for the established radio links.

7. The method according to claim 6, wherein said maximum data rate is a maximum data rate in the up direction.

8. The method according to claim 6, wherein said maximum data rate is a maximum data rate in the down direction.

9. The method according to claim 6, wherein said maximum data rate is a maximum data rate for a first type of traffic, for which a first type of error correcting code is used.

10. The method according to claim 6, wherein said maximum data rate is a maximum data rate for a second type of traffic, for which a second type of error correcting code is used.

11. The method according to claim 9, wherein a first type of error correcting code is a turbo-code.

12. The method according to claim 10, wherein a second type of error correcting code is a convolutional code.

13. The method according to claim 6, wherein said data rate is a net data rate.

14. The method according to claim 1, wherein said limits are considered on a per cell or a per base station basis.

15. The method according to claim 1, wherein said limits are considered per physical channel.

16. The method according to claim 1, wherein said limits are considered per type of physical channel.

17. The method according to claim 16, wherein one type of physical channel is a dedicated physical channel.

18. The method according to claim 16, wherein one type of physical channel is a common physical channel.

19. (Cancelled).

20. (Cancelled).

21. A base station for a mobile radio network, comprising:

means for signaling, independently of any call request, one or more limits in its processing capacity to a base station controller that controls said base station, said limits corresponding to one or more parameters representative of traffic load; and

means for receiving traffic control signals from said base station controller, said traffic control signals being determined according to said limits.

22. (Canceled)

23. (Canceled)

24. A base station controller for a mobile radio network, said base station controller comprising:

means for receiving from a base station under its control, independently of a call request, one or more limits in the processing capacity of said base station, corresponding to one or more parameters representative of traffic load; and

means for controlling said traffic load taking account of said one or more limits.

25. The method according to claim 1, wherein said processing capacity limits comprise a maximum number of radio links that can be established, a first maximum data rate for a first type of traffic, for which a first type of error correcting code is used and a second maximum data rate for a second type of traffic, for which a second type of error correcting code is used.

26. The base station according to claim 21, wherein said processing capacity limits comprise a maximum number of radio links that can be established, a first maximum data rate for a first type of traffic, for which a first type of error correcting code is used and a second maximum data rate for a second type of traffic, for which a second type of error correcting code is used.

27. The base station controller according to claim 24, wherein said processing capacity limits comprise a maximum number of radio links that can be established, a first maximum data rate for a first type of traffic, for which a first type of error correcting code is used and a second maximum data rate for a second type of traffic, for which a second type of error correcting code is used.

28. The method according to claim 1, wherein said one or more limits comprise a plurality of limits related to processing capacity, each limit corresponding to a different parameter.

29. The base station according to claim 21, wherein said one or more limits comprise a plurality of limits related to processing capacity, each limit corresponding to a different parameter.

30. The base station controller according to claim 24, wherein said one or more limits comprise a plurality of limits related to processing capacity, each limit corresponding to a different parameter.

31. The method according to claim 1, wherein said controlling step includes the step of said base station controller verifying, for said one or more parameters, if the limit value corresponding to said parameter has been reached.

32. The method according to claim 31, wherein said verifying step is performed by said base station controller on receipt of said one or more limits.

33. The method according to claim 1, wherein said one or more parameters include a parameter which may already have been exceeded by said basis station.

34. The base station according to claim 21, wherein said one or more limits include at least one limit that may already have been exceeded by said base station.

35. The base station controller according to claim 24, wherein said means for controlling includes means for verifying if, for said one more parameters, the limit value corresponding to said one parameter has been reached.

36. The base station controller according to claim 35, wherein said verifying is performed on receipt of said one of more limits.

EVIDENCE APPENDIX:

There is no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).